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NOTICE OF ALLOWANCE AND FEE(S) DUE

2292 7590 08/18/2008

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
KENNEDY, ADRIAN L	
ART UNIT	PAPER NUMBER
2129	

DATE MAILED: 08/18/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,585	12/13/2005	Gantcho Lubenov Vatchkov	1602-0201PUS1	6640

TITLE OF INVENTION: INFORMATION PROCESSOR, STATE JUDGING UNIT AND DIAGNOSTIC UNIT, INFORMATION PROCESSING METHOD, STATE JUDGING METHOD AND DIAGNOSING METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1440	$300	$0	$1740	11/18/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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Alexandria, Virginia 22313-1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

2292 7590 08/18/2008

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

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nonprovisional	NO	$1440	$300	$0	$1740	11/18/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
KENNEDY, ADRIAN L	2129	706-045000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 211 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 211 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/560,585	VATCHKOV ET AL	
	Examiner	Art Unit	
	ADRIAN L. KENNEDY	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *7-8-08*.

2. ☒ The allowed claim(s) is/are *1,3-11 and 13-22*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Joseph P. Hirl/
Primary Examiner, Art Unit 2129

Examiner's Amendment/Reasons for Allowance

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Examiner's Amendment is set forth as follows:

1. (Currently Amended) An information processor of construction machinery, comprising:

detecting means for detecting a multiplicity of combinations of n parameter values, where n is a natural number, for each of a plurality of operation modes in which an object functions, which values vary with operation of the construction machinery; and

Self-Organizing Map creating means for calculating n values by transforming the n parameter values into its derivative, including variation rates of the n parameter values, which have been detected with respect to time and that indicate a variation in a momentary state ~~the momentary state~~ of the object, and creating a Self-Organizing Map by using detection data, obtained on the basis of the multiple combinations of both n ~~parameter~~ values and n parameter ~~parameter~~ values detected by said detecting means, as learning data;

wherein said Self-Organizing Map creating means creates a plurality of the Self-Organizing Maps, serving as individual separation models and corresponding one to each of the plurality of operation modes,

wherein the operation modes are representative of the operation of the construction machinery,

wherein said detecting means includes one or more sensors, and

wherein the Self-Organizing Maps control the operation of the construction machinery for each of the construction machinery's operation modes.

2. (Canceled)

3. (Previously Presented) An information processor according to claim 1, wherein said detecting means detects the multiple combinations of n parameter values; and said Self-Organizing Map creating means initially arranges a predetermined number of neurons at random in a 2n-dimensional space, carries out training regarding a point of the detection data in the 2n-dimensional space as a learning data point, creates a Self-Organizing Map candidate regarding a neuron having a minimum distance to the learning data point as a winning neuron, and selects, from two or more of the Self-Organizing Map candidates obtained by carrying out the creating of a Self-Organizing Map candidate a number of times, a Self-Organizing Map candidate which has a characteristic closest to that of the learning data as the Self-Organizing Map.

4. (Original) An information processor according to claim 3, said Self-Organizing Map creating means calculates an average f distances of the winning neurons to the points in the learning data and a standard deviation of the distances of the winning neurons to the points in the learning data for each of the Self-Organizing Map candidates, and selects a Self-Organizing Map

candidate the average and the standard deviation of which are both minimum as the Self-Organizing Map.

5. (Original) An information processor according to claim 4, wherein, if there is no Self-Organizing Map candidate the average and the standard deviation of which are both minimum, said Self-Organizing Map creating means selects a Self-Organizing Map candidate the average of which is minimum as the Self-Organizing Map.

6. (Previously Presented) An information processor according to claim 3, wherein said Self-Organizing Map creating means deletes a neuron which has never become a winning neuron among neurons in the Self-Organizing Map that has been selected.

7. (Previously Presented) A state judging unit for judging a state of an object, comprising:

a storage unit for storing individual separation models in the form of the plural of the Self-Organizing Maps, created one for each of the plurality of operation modes by an information processor defined in claim 1;

said detecting means; and

judging means for judging which operation mode an operation of the object corresponds to based on a relative distance between a detection data point in 2n dimension corresponding to detection data obtained by said detecting means in real time and a winning neuron in each of said plural Self-Organizing Maps.

8. (Original) A state judging unit according to claim 7, wherein said detecting means calculates the relative distance by dividing the distance between the detection data point obtained by said detecting means in real time and the winning neuron in each said Self-Organizing Map by the average of distances of the wining neurons in the Self-Organizing Map to the learning data point used in the process of creating each said Self-Organizing Map in the information processor.

9. (Previously Presented) A state judging unit according to claim 7, wherein said judging means judges that, if the relative distance of one of said plural Self-Organizing Maps is equal to or smaller than a predetermined threshold value, the detection data point conform with the one Self-Organizing Map, and that, if the relative distance of said Self-Organizing Map is larger than the threshold value, the detection data point does not conform with said one Self-Organizing Map.

10. (Previously Presented) A diagnostic unit, including a state judging unit defined in claim 7, for diagnosing the object, wherein the object is a machine including a construction machine, and the plural operation modes represent a particular operation performed by said machine.

11. (Currently Amended) An information processing method <u>of construction machinery,</u> comprising:

detecting a multiplicity of combinations of n parameter values, where n is a natural number, for each of a plurality of operation modes in which an object functions, which values vary with operation of the construction machinery;

calculating n values by transforming the n parameter values into its derivative, including variation rate ~~variation rates~~ of the n parameter values, which have been detected with respect to time and that indicate a variation in a momentary state ~~the momentary state~~ of the object; and

creating a Self-Organizing Map by using detection data, obtained on the basis of the multiple combinations of n parameter values detected in said step of detecting and n values calculated in said calculating step, as learning data,

wherein, in said step of Self-Organizing-Map creating, a plurality of the Self-Organizing Maps, serving as individual separation models, are created one for each of the plurality of operation modes,

wherein the operation modes are representative of the operation of the construction machinery,

wherein, in said step of detecting, the multiple combinations of n parameter values are detected by one or more sensors, and

wherein the Self-Organizing Maps control the operation of the construction machinery for each of the construction machinery's operation modes.

12. (Canceled)

13. (Previously Presented) An information processing method according to claim 11, wherein:

the multiple combinations of n parameter values are detected in said step of detecting; and

said step of Self-Organizing-Map includes,

creating a Self-Organizing Map candidate by initially arranging a predetermined number of neurons at random in a 2n-dimensional space, carrying out training regarding a point of the detection data in the 2n-dimensional space as a learning data point and creating a Self-Organizing Map candidate regarding a neuron having a minimum distance to the learning data point as a winning neuron, and

selecting, from two or more Self-Organizing Map candidates created by carrying out said step of creating a Self-Organizing Map candidate a number of times, a Self-Organizing Map candidate which has a characteristic closest to that of the learning data as the Self-Organizing Map.

14. (Original) An information processing method according to claim 13, wherein said step of Self-Organizing-Map creating further includes a sub-step of, after said sub-step of selecting a Self-Organizing Map, deleting an idling neuron which has never become a winning neuron among neurons in the Self-Organizing Map that has been selected.

15. (Previously Presented) An information processing method according to claim 11 wherein:

when a Self-Organizing Map for a new operation mode of the object other than the plural operation modes is added,

the n parameter values are detected by said step of detecting while the object is functioning in the new operation mode by said step of detecting, and

a Self-Organizing Map for the new operation mode is created regarding detection data based on a multiplicity of combinations of the parameter values that have been detected as learning data by said step of Self-Organizing-Map creating.

16. (Previously Presented) A state judging method for judging which operation mode an operation of the object corresponds to using a plurality of Self-Organizing Maps, serving as individual separation models and created one for each of a plurality of operation modes by an information processing method according to claim 11, comprising:

detecting the n parameter values that vary with operation; and

judging which operation mode an operation of the object corresponds to based on a relative distance between a detection data point in a 2n-dimensional space corresponding to detection data obtained in real time in said step of detecting and a winning neuron in each of the plural Self-Organizing Maps.

17. (Currently Amended) A state judging method according to claim 16, further comprising:

between said step of detecting and said step of judging, calculating n time-difference values by processing the n parameter values detected in said step of detecting,

the operation mode of the object is judged based on 2n-dimensional data including the n parameter values, which have been detected and which indicate the momentary state ~~a momentary state~~ of the object, and the n time-difference values, which have been processing the n parameter values detected in said step of detecting and which indicate the variation ~~a variation~~ in the momentary state of the object, in said step of judging.

18. (Previously Presented) A state judging method according to claim 17, wherein, said step of judging comprises,

obtaining the relative distance by dividing the distance between the detection data point obtained in real time in said step of detecting and the winning neuron in the Self-Organizing Map by the average of distances of the wining neurons in each said Self-Organizing Map to the learning data point used in the process of creating the Self-Organizing Map carried out by the information processor,

if the relative distance of each said the plural Self-Organizing Maps is equal to or smaller than a predetermined threshold value,

judging the detection data point to conform with the last-named Self-Organizing Map, and

if the relative distance of each said Self-Organizing Map is larger than the threshold value,

judging the detection data point not to conform with said one Self-Organizing Map.

19. (Previously Presented) A diagnosing method, including a state judging method defined in claim 16, for diagnosing the object wherein the object is a machine including a construction machine, and the plural operation modes represent a particular operation performed by said machine.

20. (Original) A diagnosing method according to claim 19, wherein, if there is no Self-Organizing Map conforming, the particular operation is judged to be an unknown mode or an abnormal mode in said step of judging.

21. (Currently Amended) An information processor according to claim 1, wherein if the parameter values are represented by d(k), the N values are represented by $\Delta d(k) = \frac{d}{dt} d(k)$,

where, k represents current time, and d(k) represents the momentary state of the construction machinery.

22. (Currently Amended) An information processor according to claim 11, wherein if the N parameter values are represented by d(k), the N values are represented by $\Delta d(k) = \frac{d}{dt} d(k)$,

where, k represents current time, and d(k) represents the momentary state of the construction machinery.

Authorization for this examiner's amendment was given in a telephone interview with Maki Hatsumi on 8/4/08.

Claims 1, 3-11 and 13-22 are allowed.

The following is an examiner's statement of reasons for allowance: claims 1, 3-11 and 13-22 are considered allowable since when reading the claims in light of the specification, as per MPEP § 2111.01, none of the references of record alone or in combination disclose or suggest the combination of limitations specified in the independent claims.

None of the references of record alone or in combination disclose or suggest the combination of limitations of detecting means for detecting a multiplicity of combinations of n parameter values, where n is a natural number, for each of a plurality of operation modes in which an object functions, which values vary with operation of the construction machinery (as supported at ¶ 0016, 0032, and 0081), Self-Organizing Map creating means for calculating n values by transforming the n parameter values into its derivative, including variation rates of the n parameter values, which have been detected with respect to time and that indicate a variation in a momentary state of the object (as supported at ¶ 0037 and 0047), creating a Self-Organizing Map by using detection data, obtained on the basis of the multiple combinations of both n values and n parameter values detected by said detecting means, as learning data (as supported at ¶ 0114), wherein said Self-Organizing Map creating means creates a plurality of the Self- Organizing Maps, serving as individual separation models and corresponding one to each of the plurality of operation modes (as supported at ¶ 0016, 0018 and 0034), wherein the operation modes are

representative of the operation of the construction machinery (as supported at ¶ 0032 and 0157), wherein said detecting means includes one or more sensors (as supported at ¶ 0082), and wherein the Self-Organizing Maps control the operation of the construction machinery for each of the construction machinery's operation modes, as specified in independent claims 1 and 11

Regarding 35 USC 101, the examiner takes the position that the applicant's claimed invention is statutory due to the fact that it transforms the underlying detected parameter values representing values sensed from construction machinery into the "useful, concrete and tangible result" of Self-Organizing Maps which control the operation of the construction machinery for each of the construction machinery's operation modes. The examiner additionally takes the position that the high level computations, and/or method steps are performed by a computer and that the medium is a tangible computer memory (as supported at ¶ 0156, and embodied in FIG. 1 and FIG. 9).

The examiner has found that Delgado (Control of Nonlinear System Using a Self-Organising Neural Network, referred to as Delgado) in combination with Otte (USPN 6,314,413, referred to as Otte) is the closest prior art of record, teaching (or suggesting) a Self Organizing Map) for controlling the operation of a physical plant. However, the examiner has found that the applicant's claimed invention is distinct from the invention of Delgado in combination with Otte due to the fact that it would have been obvious to one of ordinary skill in the art that a controlling a plant and controlling construction machinery are patentably distinct teachings. Additionally, the prior art fails to teach (or suggest) Self-Organizing Maps controlling the operation of

construction machinery for each of the construction machinery's operation modes along with the other limitation specified in independent claims 1 and 11.

Shakespeare et al. (USPubN 2002/0011319, referred to as Shakespeare), is the closest prior art of record, teaching (or suggesting) a method and apparatus for controlling the manufacture of paper. However, the examiner has found that the applicant's claimed invention is distinct from the invention of Shakespeare due to the fact that Shakespeare alone or in combination with related prior art fails to teach (or suggest) 1) the synthesizing of one or more process conditions or product properties, 2) the use of neural networks the are comprised of a plurality of sub-networks, 3) training a neural network using historical and synthesized process condition data, or 4) the removing and/or replacing of unusable or invalid data with valid data or putting the data into a more usable format in combination with the other limitation specified in the independent claims.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adrian L. Kennedy whose telephone number is (571) 270-1505. The examiner can normally be reached on Mon -Fri 8:30am-5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ALK/

/David R Vincent/
Supervisory Patent Examiner,
Art Unit 2129

/Joseph P. Hirl/

Primary Examiner, Art Unit 2129